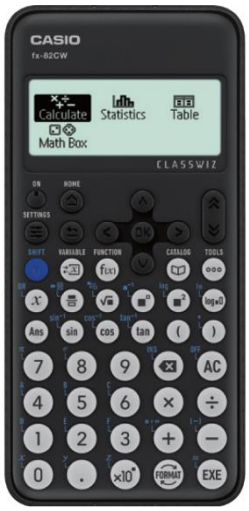
STUDY MATH WITH CASIO fx-82CW CALCULATOR

Solving Sample Secondary Math Questions with CASIO fx-82CW



Done By Casio Middle East and Africa- GAKUHAN

GAKUHAN CMEA Education Department

CASIO

Introduction

I. **Below are practice questions for learners in secondary schools in Kenya.**

II. **The sample solved questions show how to use the CASIO fx-82CW scientific calculator in solving questions.**

III. **Students can learn how to use the calculator for better performance in solving questions.**

Q1. Evaluate $\dfrac{1\frac{4}{6} \div \frac{2}{5} \text{ of } 2\frac{1}{3} - \frac{2}{14}}{\frac{1}{10} + \frac{23}{32} \times 1\frac{2}{10}}$

Answer:

For Numerator:

$$\frac{10}{6} \div \left(\frac{2}{5} \times \frac{7}{3}\right) - \frac{2}{14} = \frac{5}{3} \div \frac{14}{15} - \frac{1}{7} = \frac{5}{3} \times \frac{15}{14} - \frac{1}{7} = \frac{5}{1} \times \frac{5}{14} - \frac{1}{7} = \frac{25}{14} - \frac{1}{7}$$

$$= \frac{23}{14}$$

For Denominator:

$$\frac{1}{10} + \frac{23}{32} \times \frac{12}{10} = \frac{1}{10} + \frac{23}{8} \times \frac{3}{10} = \frac{1}{10} + \frac{69}{80} = \frac{77}{80}$$

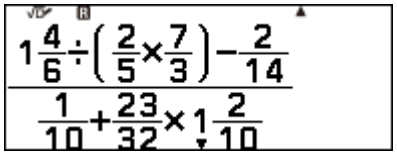
Numerator/Denominator:

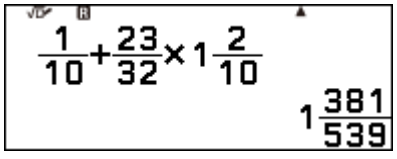
$$\frac{23}{14} \div \frac{77}{80} = \frac{23}{14} \times \frac{80}{77} = \frac{1840}{1078} = \frac{920}{539} = 1\frac{381}{539}$$

Steps using the fx-82CW to check your answers:

SHIFT ▲ SHIFT 1 → 4 ▼ 6 → ÷ (SHIFT 2 ▼ 5 → × SHIFT 7 ▼ 3 →) − SHIFT 2 ▼

1 4 ▼ SHIFT 1 ▼ 1 0 → + SHIFT 2 3 ▼ 3 2 → × ▲ SHIFT 1 → 2 ▼ 1 0 EXE





Q2. Solve for $\boldsymbol{\theta}$

$\sin(3\theta - 10) = \cos(7\theta)$

Answer:

$$(3\theta - 10) + (7\theta) = 90°$$

$$3\theta - 10 + 7\theta = 90°$$

$$10\theta = 100°$$

$$\theta = 10°$$

Steps using the fx-82CW to check your answers:

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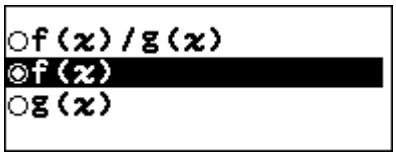

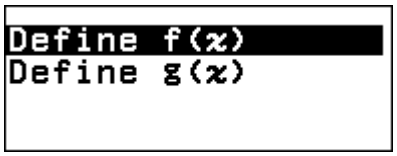

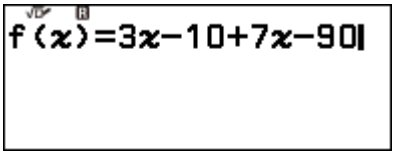

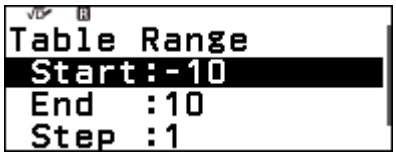

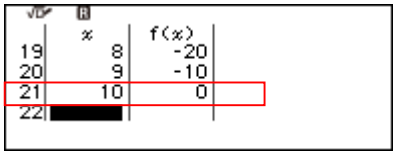

Q3. Find the mean and median of the following set of data:

1, 19, 5, 100, 300, 23, 23, 43, 19

Answer:

Mean $= \frac{1+19+5+100+300+23+23+43+19}{9} = 59.2$

Median: 1, 5, 19, 19, 23, 23, 43,100, 300

Steps using the fx-82CW to check your answers:

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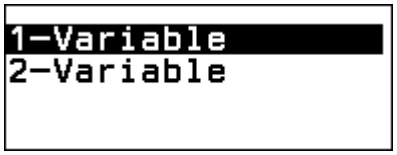
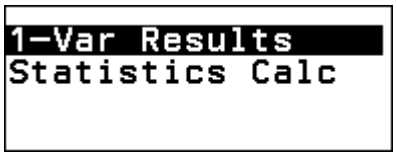
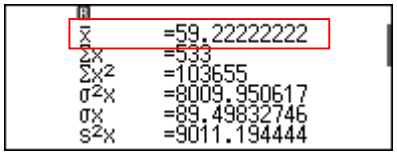
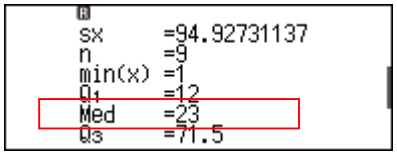
4 3 EXE 1 9 EXE EXE EXE









Q4. Solve

$$\frac{3}{2}x - 2 < 4x \leq 5x - 1$$

Hence list 2 integral values that satisfies the inequalities.

Answer:

$$\frac{3}{2}x - 2 < 4x \;\; ; \;\; 4x \leq 5x - 1$$

$$-2 < 4x - \frac{3}{2}x \; ; \;\; 4x - 5x \leq -1$$

;

④ ⊖ ▤ ③ ▽ ② EXE

④ ⊖ ⑤ EXE

$$-2 < \frac{5}{2}x \; ; \;\; -1x \leq -1$$

;

⊖ ② ÷ ▤ ⑤ ▽ ② EXE

⊖ ① ÷ ⊖ ① EXE

$$-\frac{4}{5} < x \; ; \;\; x \geq 1$$

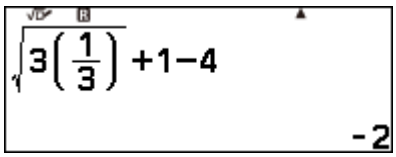
→ Two Integral values that satisfies the inequalities could be 1 & 2.

Q5. Let $\boldsymbol{f(x) = \sqrt{3x} + 1 - 4}$

Evaluate: $f\left(\frac{1}{3}\right)$ *and* $f(-2)$

Answer:

$$f\left(\frac{1}{3}\right) = \sqrt{3(\frac{1}{3})} + 1 - 4 = -2 \quad \& \quad f(-2) = \sqrt{3(-2)} + 1 - 4 = Undefined$$



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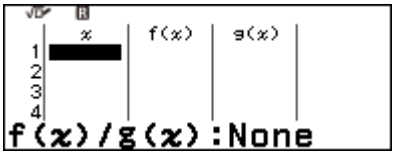
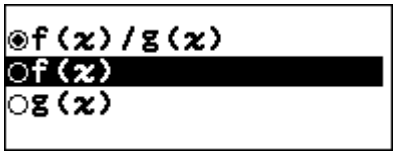
√ ③ (▤ ① ▽ ③ ▷) ▷ + ① − ④ EXE √ ③ (− ②) ▷ + ① − ④ EXE

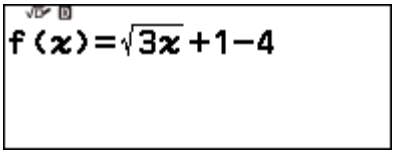
Another way to check your answers using fx-82CW:

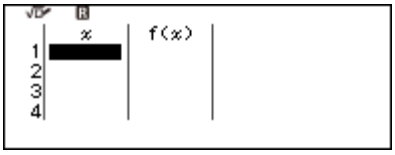
⌂ ▷ ▷ OK ◦◦◦ ▽ ▽ OK ▽ OK AC ◦◦◦ ▽ OK OK √ ③ x ▷ + ① − ④ EXE (

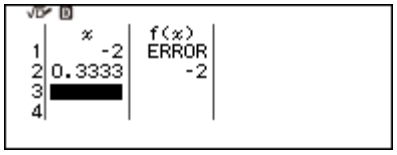
− ②) EXE ① ▤ ③ EXE











Q6. A teacher recorded the scores of a test for her class. The scores were as follows:

85, 90, 78, 92, 88, 76, 95, 89, 84, 90

Calculate the interquartile range.

Answer:

First sort the data set: 76, 78, 84, 85, 88, 89, 90, 90, 92, 95

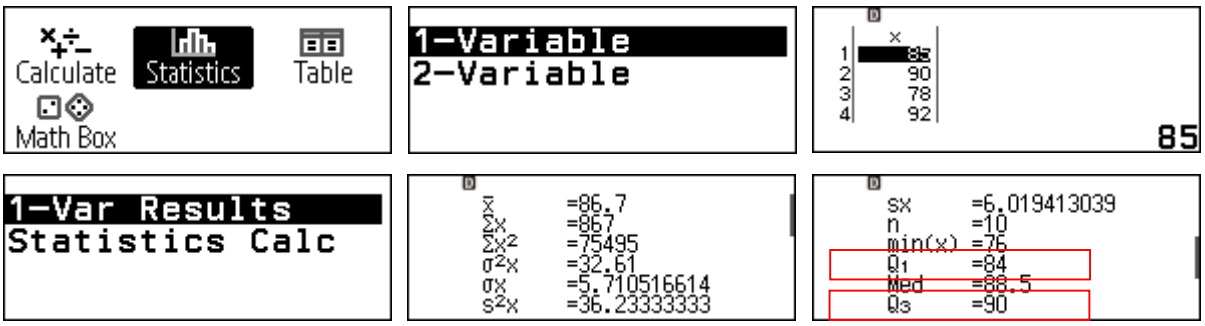
Find the First Quartile Q1: 84

Find the Third Quartile Q3: 90

Find the interquartile IQR: Q3-Q1: 90-84=6

Steps using the fx-82CW to check your answers:

⌂ > OK OK 8 5 EXE 9 0 EXE 7 8 EXE 9 2 EXE 8 8 EXE 7 6 EXE 9 5 EXE
8 9 EXE 8 4 EXE 9 0 EXE EXE EXE ∨



You can simply then find Q3-Q1

Note: No need to sort the data while plugging them in the calculator

Q7. A circus tent is shaped like a cone. The tent has a diameter of 20 meters and a height of 30 meters. The circus manager wants to know the volume of space inside the tent to ensure it can accommodate the planned performances and audience. Can you help the circus manager calculate the volume of the tent? (Round your answer to the nearest tenth).

Answer:

The formula for the volume V of a cone is given by

$$V = \frac{1}{3} \times \pi \times r^2 \times h$$

, where r is the radius and h is the height.

In this case, the diameter of the tent is given as 20 meters, so the radius r is 20/2 = 10 meters. The height h is given as 30 meters.

Substituting these values into the formula gives:

$$V = \frac{1}{3} \times \pi \times (10\,m)^2 \times 30\,m = 10{,}000\,\pi = 3141.6\,cubic\ meters.$$

Steps with fx-82CW:

⌂ OK ① 🖶 ③ > × ↑ 7 × ① 0 ■² × 3 0 EXE FORMAT ∨ OK